

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

Union Carbide Corp
Union Carbide Corp - St Charles Operations
Taft, St. Charles Parish, Louisiana
Agency Interest Number: 2083
Activity Number: PER20070040
Proposed Permit Number: 2343-V1

I. APPLICANT:

Company:
Union Carbide Corporation.

P. O. Box 50, Hahnville, LA 70057

Facility:
St. Charles Operations, Energy Systems Unit
355 Hwy. 3142 Gate 28
Approximately 2 miles west of Hahnville, on the west bank of the Mississippi River,
off LA Highway 3142 at corner of LA Hwy 18
Approximate UTM coordinates are 746.184 km East and 3,319.222 km North, Zone
15.

II. FACILITY AND CURRENT PERMIT STATUS:

Union Carbide Corporation, a subsidiary of the Dow Chemical Company, owns and operates a chemical manufacturing facility in St. Charles Parish near Taft. The St. Charles Operations is an integrated petrochemical manufacturing complex, converting petroleum-based raw materials into a variety of basic building block, intermediate chemicals and plastics. The products from this facility, eventually wind up in thousands of everyday household, business, and consumer products. The facility as a whole started operation before 1969. The Energy Systems Unit currently operates under PSD-LA-590 issued September 22, 1995 for the Cogeneration Unit, as well as TV Permit No. 2343-V0 and PSD-LA-707 (for Boilers, Emission Points 3104 and 3105), both issued June 27, 2005.

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Union Carbide Corp - St Charles Operations is a designated Part 70 source.
 Several Part 70 permits have been issued to the operating units within the Unit.
 These include:

Permit No.	Unit or Source	Date Issued
2814-V0	Methyl Glycol Ethers (MGE) Plant	10/31/2002*
1912-V0	Specialty Products Unit	3/12/2003*
2350-V3	LP-3 Unit	12/30/2003
2858-V0	PXC Unit	7/8/2004
2422-V1	Olefins I & II	9/30/2004
2343-V0	Energy Systems	6/27/2005
2421-V0	Amines Plants	11/10/2005
2104-V1	Environmental Protection Dept. (EPD)	2/16/2006
2656-V0	Olefins Distribution/Site Logistics Units	3/13/2006
2214-V0	LP-6	3/27/2006
477-V0	Unit 5 (Amines I)	6/08/2006
2876-V1	Unit 9	8/10/2006
476-V1	Oxide I	1/30/2007
513-V2	Acrylics I	6/15/2007
1909-V1	Higher Glycols Plant	6/18/2007
2446-V1	Unit 8 (EXP)	7/3/2007
373-V1	Oxide II	7/5/2007
2254-V0	Acrylics 2	7/20/2007
2257-V4	TB1 and TB2 Units	10/9/2007

* A timely permit renewal application submitted

In addition, PSD-LA-590 issued September 22, 1995 for the Cogeneration Unit, as well as PSD-LA-707 issued June 27, 2005 for Boilers, Emission Points 3104 and 3105 were also issued to the complex.

I. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire dated November 9, 2007, was submitted by Union Carbide Corp. requesting a Part 70 operating permit modification.

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Project

This permit modification includes the following updates:

- Site Remediation MACT has been incorporated into the permit.
- UCC is requesting the removal of NESHAP Subpart DDDDD requirements from the permit as the regulation has been vacated.
- The addition of a new diesel-fired generator for the Emergency Operations Center (EOC), Emission Point 3106. It will only be used when there is a loss of power and for required testing and maintenance. It will be an emergency engine that is subject to NSPS Subpart IIII. The generator addition constitutes a Title I modification which triggers significant modification procedures, including public notice of the proposed permit.
- The addition of a diesel tank for the EOC generator as insignificant activity.

Proposed Permit

Permit 2343-V1 will be a significant modification to the Part 70 operating permit 2343-V0 for the Energy Systems Unit.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	180.96	181.00	+0.04
SO ₂	14.30	14.33	+0.03
NO _x	2541.92	2542.44	+0.52
CO	1967.32	1967.43	+0.11
VOC	111.14	111.18*	+0.04
Sulfuric Acid	0.01	0.01	-

*Includes 8.50 TPY of LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs).

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

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Applicability and Exemptions of Selected Subject Items

For the applicability and exemptions of selected subject items at the unit, refer to Section X - Table 1. Applicable Louisiana and Federal Air Quality Requirements, and Section XI -Table 2. Explanation for Exemption Status or Non-Applicability of a Source, of the proposed permit.

Prevention of Significant Deterioration/Nonattainment Review

PSD review is not required with this modification.

Streamlined Equipment Leak Monitoring Program

It is required that the Energy Systems Unit comply with a streamlined equipment leak monitoring program. Compliance with the streamlined program shall serve to comply with each of the fugitive emission monitoring programs being streamlined.

For the Energy Systems Unit, fugitive emissions are subject to the requirements of LAC 33:III.2121, and the fugitive emissions shall be monitored as required by this program LA MACT Determination for Non-HON Equipment Leaks (Streamlined Fugitive Emissions Program).

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
UCC- Energy Systems Unit	LAC 33:III.5109 – Louisiana MACT Determination for Non-HON Sources	≥ 5% VOTAP	LAC 33:III.5109 – Louisiana MACT Determination for Non-HON Sources
	LAC 33:III.2121 –	≥ 10% VOTAP	

MACT Requirements

The applicable MACT requirements for the different sources are described in the Specific Requirements section of the proposed permit.

Air Quality Analysis

None

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping

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requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

None

VI. PERIODIC MONITORING

The following periodic monitoring is done at the facility:

- Quarterly monitoring of leaks to comply with the LDAR program for fugitive emissions at the facility, as per Louisiana Non-HON MACT.
- Monitoring gas turbine generator/heat recovery steam generator (GTG/HRSG) and Package Boilers for bypass flow of vent streams with flow indicator every 15 minutes and by visual inspection monthly, as per 40 CFR 60 Subpart RRR.
- Monitoring of NO_x emissions from Package Boilers by Continuous Monitoring System (CMS) as per 40 CFR Subpart Db.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of

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Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, *required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).*

PM₁₀ – *Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.*

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.